

IV.—Letters from J. MACGILLIVRAY, Esq., *Naturalist to H.M. Surveying Ship Rattlesnake*, Capt. Stanley, R.N. (Communicated by Professor EDWARD FORBES.)

H.M.S. Rattlesnake, at sea, May 3, 1847.

MY DEAR SIR,

As we expect to reach the Isle of France tomorrow, and as I have a case of specimens ready to go by the first ship, I now proceed to write an accompanying letter giving a brief account of our voyage up to the present time.

We sailed from Plymouth on December 11th, 1846, and after a quick passage of seven days reached Madeira, not sorry to have escaped from the sharp commencement of an English winter. Knowing that unless by dredging I need expect nothing new during a visit to a place carefully searched by resident zoological collectors, I was annoyed to find that the depth of water and the nature of the bottom required for the working of the dredge a more powerful boat than I could procure. During various excursions on shore I attended chiefly to the land shells, and obtained twenty-three species\* (exclusive of an *Ancylus* and a *Lymnæa*) at various elevations up to the Pass of the Corral, 2700 feet above the sea, where single species of *Achatina*, *Clausilia* and *Pupa* were found under stones along with coleoptera of the genera *Scarites* and *Pimelia*. The ferns (*Adiantum Capillus-Veneris*, *Davallia canariensis*, &c.) about the dripping rocks would, to a botanist, have made ample amends for the small number of plants in flower; yet many butterflies (*Colias Edusa*, *Cynthia Cardui*, and a *Vanessa* like *V. Atalanta*) were flitting about; but the lizards, which in the month of April I had seen basking in great numbers upon every wall, had not yet awoken from their winter's sleep.

Leaving Madeira we sighted Palma, and passed between St. Jago and Mayo, so close to the latter that various insects (especially an *Acrydium* and a fine blue *Æshna*) paid us a visit and were detained. We crossed the line on January 13th with the usual ceremonies attending the introduction of upwards of a hundred novitiates at Neptune's levee. In lat. 2° N. soundings were tried for with 2600 fathoms (or very nearly three statute miles) of line without success. In this neighbourhood also I procured specimens of a British storm petrel (*Thalassidroma Bullockii*), the occurrence of which in such low latitudes would have surprised me had I not known (from Mr. Gould) that *Th. Wilsoni* was common to both

\* Among them were *Bulimus decollatus*, *Clausilia deltostoma*, *Bulimus lubricus*, *Pupa anconostoma*, *Helix maderensis*, *H. undata*, *H. cellarius*, *H. nitidiuscula*, *H. polymorpha* and *H. pulchella*.

hemispheres. The former was rather abundant in the region of calms and variables extending across the equator between the limits of the trade-winds. While within the tropics we had the usual accompaniments of dolphins, flying-fish, physaliæ, velellæ, &c., but the towing-net produced very little.

Daybreak on January 23rd found us off Cape Frio, and in the afternoon we anchored in the noble harbour of Rio de Janeiro. I shall not trespass upon your patience by giving my first impressions of the New World, or dilating upon the magnificence of the scenery. Landing upon the shores of the American continent, I was not so much struck with the richness of the vegetation as with the exuberance of animal life.

Many of the walks about St. Salvador are doubly interesting to the naturalist from the great beauty of the scenery and the variety of animal productions. My favourite one led me along the aqueduct supplying the city from the Corcovado mountain, a distance of a league. Here the number of species of Lepidoptera and the frequency of gorgeous colouring and great size are among the first things to attract one's attention. Of these the *Heliconii*, *Hesperia* and *Erycinæ* are the most numerous, some of the first gaudily painted with red, yellow and black. One of the commonest butterflies, *Peridromia Amphinome*, possesses the singular habit of frequenting the trunks and limbs of trees, where it is difficult of detection while resting with expanded wings, the variegated upper surface of which often resembles the lichen-covered bark. The air was usually filled with the harsh grating cries of large black *Cicadæ*, here nearly as noisy, though not so numerous, as in New South Wales.

“Et cantu querulæ rumpent arbusta Cicadæ.”

Birds were scarce, indeed I saw only one humming-bird; nor was I so fortunate among the land shells as I had anticipated. The pretty *Bulimus Gravesii*, King (see App. to Voy. of Adventure and Beagle), and another [R. 80] \* of larger size, are usually found creeping up the trunks and lower branches of trees, and I found a colony of King's *Helix translucens* upon a wall concealed by rank vegetation. *Helicina sordida*, King, occurred once upon a low Mimosa bush, and with this I may conclude; for, even with the kind assistance of Mr. King, I could muster only fourteen species of land and three of freshwater shells.

I anticipated some good results from dredging and was not disappointed. Being unable to procure a boat from the ship, I was obliged to content myself with one from the shore manned by four negro slaves, who, after all, could scarcely keep the

\* The numbers refer to specimens. With the aid of Mr. Hanley I have identified some of the mollusca mentioned.—E. F.

dredge moving. No sieves had been furnished by the dock-yard, nor, although I ransacked the Rua d' Ouvidor from one end to the other, could I obtain the requisite materials for making one. In this dilemma I procured a wire-gauze dish-cover and a machine for washing rice in, both of which Huxley and myself found to answer capitally. We dredged in Three Fathom and Botafogo bays in from three to five fathoms, sand. Among the results are a fine *Scutella* with notched and perforated margins [R. 155 to 159], a boring *Modiola* [R. 102] \*, three species of *Dentalium* [R. 76] †, and others of the genera *Nucula*, *Oliva*, *Ancillaria*, *Subula*, *Fusus*, &c., in all about forty-five species of mollusca ‡. But the most interesting acquisition was a fish of that most anomalous genus *Amphioxus*. It appears to differ from the European species in the relative position of the anus, the only distinction I can observe, judging from brief descriptions. Besides the specimens in my general collection, I inclose some in a small bottle which I beg you will transmit to our friend Prof. Goodsir, who has so admirably described the structure of this singular fish. Huxley, with his usual industry and success, has been working away at it, and pointed out to me distinct hepatic and generative systems, neither of which Goodsir mentions. The spermatozoa were quite distinct. We found the *Amphioxus* in from five to two fathoms in sand of various degrees of coarseness; it has exactly the habits of the *Ammocetes* in Britain, burying itself in the sand and moving through it with extraordinary rapidity.

A visit to the market at Rio will repay the collector. He ought to go early in the forenoon when the fishing-boats come in and are drawn up on the muddy shore. These are long canoes hollowed out of the trunk of a tree managed by one or two men. The variety of fish is considerable and constantly varies. The most plentiful kinds were a small *Clupea* [S. 15], and an *Engraulis* [S. 18] with a broad lateral silvery band. Here and there are large baskets filled with loathsome land-crabs covered with black slimy mud, along with others containing large and handsome *Lupea* [C. 50 and 51], and a fine *Palemon* [S. ]. Among the articles exposed for sale I was surprised to see small sharks of various kinds, and cuttle-fish (*Octopus*) [S. 36], and *Loligo* [S. 2].

In St. Salvador, the capital of an extensive empire, a city containing 250,000 inhabitants, there is little for a stranger from Europe to admire. On landing he is apt to turn up his nose at the stench and filth which he encounters under a tropical sun,

\* *M. cubitus*, Say.

† One of these is the tube of an Annelid.—E. F.

‡ Among the mollusca were *Oliva micans*, *Solen Sloanei*, a new *Lucinopsis*, and a new *Nucula* and some other new shells.

and seeks in vain for grandeur or architectural beauty in the palace, the churches, and the other public buildings. He may occasionally smile at such oddities as an omnibus drawn by six mules, and be amused by observing the motley hue of the passengers in the crowded streets; but he turns away in disgust when he sees gangs of negro slaves performing the work of beasts of burthen, and that they are treated worse than such is shown by the frequency of iron masks and collars. When one finds that the Brazilians have degenerated from the parent stock—

“Lusian slave, the lowest of the low,”—

he cannot place them very high in the list of nations. For the state of morals among the “Bravo gente Brasileiro,” one fact speaks volumes. When a bill for the legitimation of all natural children throughout the empire was introduced, it was opposed on the ground that, if carried, it would completely break up many of the principal families by giving publicity to the great frequency of incestuous intercourse among them. The force of the objection being admitted the bill was at once withdrawn.

We left Rio on February 2nd, and while hove to outside the entrance I got a haul with the dredge in thirteen fathoms, which produced a small *Terebratula* [R. 103]\*, and a minute univalve [R. 105], the genus of which I could not determine. During our passage to the Cape of Good Hope, which, from unfavourable winds, occupied a period of seven weeks, I was surprised at the entire absence of *Daption capensis* and *Diomedea melanophrys*, two of the commonest oceanic birds which I had on former occasions met with abundantly in the South Atlantic. Of the three albatrosses which occurred, *D. exulans* was seldom absent, but *D. fuliginosa* and *D. chlororhyncha* (both on one or two occasions very numerous) left us in the meridian of Greenwich. One young bird of the first-named species followed the ship for twenty-four days, during which time we had gone over a distance of 2700 miles. *Procellaria conspicillata* was met with two days after leaving the coast of Brazil, and continued with us until within a day's sail of the Cape, when it was replaced by its analogue *P. aquinoctialis*, which even enters False Bay and attends upon the fishing-boats. *P. Atlantica* and *P. mollis* occurred throughout, and were occasionally seen in great numbers; *P. leucocephala* paid us an occasional visit; and Prions were sometimes seen at a distance, but I could not identify the species. Of the storm petrels, *Th. leucogaster* occurred nearly every day, sometimes in considerable numbers, and solitary individuals of *Th. Wilsoni* were

\* *Terebratula rosea*; the first time its true locality has been noticed. The univalve seems new.

observed in our wake on several occasions. A very fine *Puffinus* [B. 6], apparently a new species allied to Gould's *Pro. flavirhyncha*, was found generally distributed across the South Atlantic, between the meridians of  $28^{\circ}$  W. and  $1\frac{1}{2}^{\circ}$  E. longitude; and on two successive days, while approaching Tristan d'Acunha, myriads of these birds passed the ship to the westward, apparently coming from that island. A few days afterwards, while 480 miles from the nearest land, a strange tern [B. 15] came on board and was added to the collection. Our daily practice of heaving to to ascertain the temperature of the water at considerable depths (150 and 350 fathoms) permitted me to obtain a boat whenever the sea was sufficiently smooth to admit of lowering one with safety, and I was thus enabled to procure specimens of many of the *Procellariadæ*. On one of these occasions the jolly-boat was swamped and turned over keel up. Fortunately we all escaped either by reaching the life-buoy or clinging to the boat until relieved; but my best gun, having none of the natatorial properties of the birds it was intended to destroy, went down to the realms of Father Neptune, where I can only hope it may prove useful in developing the "young idea" of the juvenile members of his family.

On our passage across the South Atlantic, the towing-net afforded a rich harvest on more than one occasion. While nearly becalmed in lat.  $34^{\circ} 40'$  S. and long.  $4^{\circ}$  W. the sea was found teeming with marine animals. Great numbers of a small *Physalia*, *Velella emarginata*, two species of *Ianthina*\* [R. 175, 176, and S. 43, 44], two of *Glaucus* [S. 42], and one of *Pneumoderma* [S. 40], were among those taken. Nor ought I to omit a beautiful silvery blue *Idotea* [C. 6] which swims on the surface like a *Gyrinus*, and along with *Ianthina* preys upon the *Velella*. Attached to the cartilaginous skeleton of one of these last I also found several blue *Anatifæ* [R. 177]. When in about  $14^{\circ}$  E. long. I was much pleased to meet with, among other pelagic crustacea (*Phrozini* [C. 34, 35], &c.), three species of *Alima* [C. 38, 42, 43], a genus remarkable for its singular glassy transparency. Here also occurred numerous examples of *Hyalea inflexa*, making, with the large *H. tridentata* (which was found generally distributed) and *H. longirostra* (taken off Rio), the third of the genus in my collection.

The Rattlesnake arrived at the Cape of Good Hope on the 8th of March, and this made my third, and I hope my last, visit to that colony. We did not sail until April 10th, our stay being protracted by a succession of south-easterly gales, which impeded the survey of Simon's Bay. The weather, and the difficulty of

\* *Ianthina globosa* and *I. exigua*.

procuring a boat, prevented me from dredging as often as I could have wished. As it was I met with very indifferent success. Some curious crustacea came up—species of *Leucosia*, *Macropodia*, *Hymenosoma*, *Inachus*?, &c.; but the mollusca were very few in number, consisting chiefly of solitary representatives of *Bullia*, *Nassa*, *Turritella*, *Tellina* and *Turbo*\*. The rocky shores of False Bay furnished very little variety of shells, although the detritus on the beach shows that many fine ones exist there. The *Patellæ* are the most numerous, and some attain a large size. In the pools I procured a few *Asteriadae*, and an *Echinus* [R. ] remarkable for the variety of colours (from deep blue to sandy gray) which it presents. Two species of *Comatula* were also found, but I had no fresh water at hand into which to plunge the specimens, consequently they broke up into small fragments before I reached the ship.

In the neighbourhood of Simon's Town the slope of the sandstone range, stretching between Cape Point and Table Mountain, extends as far as the shore, which, when not sandy, is formed by projecting masses of syenite. There is consequently little level ground and scarcely any susceptible of cultivation, the whole being thinly covered with bushes of *Proteaceæ* and *Ericaceæ*. *Mesembryanthemum edule* is the prevailing herbaceous plant on the sandy flats, and harbours a small *Helix* [R. 192]. A *Cyclostoma*†, two *Helices*, and a *Pupa* are abundant about the roots of bushes, but nearly all my specimens were dead. Birds are numerous; every clump of flowers attracts numbers of beautiful sun-birds, chiefly *Cinnyris chalybea*, and in the Admiral's garden I was pleased to see a number of the pensile nests of a kind of *Ploceus* dangling from the fir-trees. Baboons (*Papio cynocephalus*) are plentiful on the hills, which also harbour numbers of the *Hyrax capensis*, and on the low sandy grounds *Bathyergus maritimus* burrows like a mole, and the pretty little *Mus Pumilio* forms long runs among the bushes.

One day I ascended Table Mountain, for the double purpose of stretching my legs and of procuring some *Helices* which I had found near the summit in 1842. Scarcely a plant was in flower—even the ferns were nearly all burnt up, but the patches of *Leucodendron argenteum* looked as fresh as ever. Here and elsewhere at the Cape I have often been struck with the strong resemblance between the vegetation of the barren, sandy and stony tracts, and that of similar spots in Australia. The extensive ge-

\* Among these were *Nassa pallida*, *Bullia levigata*, *Turbo Sarmaticus*, *Trochus merula*, *Purpura laginula*, *Patella pectinata*, *Patella monopsis*, *Tellina pulchella* and *Cardita concamerata*.

† *C. Listeri*.

nus *Protea* supplies the place of the *Banksia* of New Holland, in which country the *Ericææ* of Southern Africa are admirably represented by the beautiful family of *Epacridæ*. The geology of the mountain has, I dare say, been often described. The junction of the granite with the superincumbent sandstone is exposed in the bed of the rivulet, and the latter rock assumes all the gradations between fine-grained quartzose sandstone and a conglomerate of quartz pebbles of moderate size. The path suddenly opens out upon the summit after leading up a ravine walled in by fine mural cliffs. The summit (3500 feet in height) is nearly flat and almost devoid of vegetation. While overlooking Cape Town and admiring the beautiful regularity of the streets, with my legs dangling over a precipice of 1200 feet, I amused myself with watching the gyrations of a pair of vultures (*V. Kolbii*), from which, like the soothsayers of old, I rather prematurely drew a good omen, for I was unsuccessful in my search after the shells. On my way down I found a freshwater crab (*Thelphusa perlata*?) [C. 101] in the rivulet at an elevation of 2000 feet.

We were all heartily tired of Simon's Town long before quitting it—for my part I never left a place with so little regret. The weather was too boisterous to be agreeable, the zoology of the place was already well-known, and we were tired of hearing the interminable "Caffre war" dinned into our ears from morning to night as an excuse for high prices and various kinds of extortion worthy even of Sydney in its halcyon days of convictism.

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H.M.S. Rattlesnake, at sea, October 12th, 1847.

MY DEAR SIR,

Having now entered upon the most important part of the voyage, I am anxious to bring up my correspondence with you, as five months will elapse before I shall again have an opportunity of writing. We sailed yesterday from Sydney in company with our tender the 'Bramble' schooner, and expect to return in the end of February to refit for the second cruise—one of twelve or eighteen months—to the N.E. and N. coasts of New Holland, New Guinea, and the islands in the Arafoura Sea. At present we are going into Moreton Bay, thence to proceed to Port Curtis, on the shores of which the lately-formed and almost as quickly abandoned colony of North Australia was founded by Lieut.-Colonel Barney.

I last wrote you from Mauritius of date May, per barque 'Rambler,' by which vessel I also sent most of the specimens collected up to that time, catalogues of which I now inclose. During the thirteen days which we spent at Port Louis the time

passed very agreeably, and it is one of the few places which I ever left with regret.

One morning I walked out to Pamplémouse, a village seven miles distant, for the joint purpose of visiting the Botanic Garden, and collecting a few flowers from the tombs of "Paul and Virginia" for some album-keeping friends at home. The shady walks, the rivulets and ponds of water in the garden are unexceptionable, and for solitary rambles and the holding of merry picnic parties these cool retreats are admirably adapted, but I looked in vain for any indication of botanical arrangement. In a coffee grove adjoining "Les Tombeaux" I procured numbers of a small *Helix* [R. 354], and the fine but common *Achatina Mauritianæ*. The latter burrows in the earth during dry weather, but some heavy rain which had fallen during the night brought it out in great numbers. In a brook by the road-side I found a decoliated *Pirena* [R. 359], and a neighbouring pond furnished specimens of *Melania Amarula*.

Another day I paid a visit to the summit of La Pouce, which rises in a pinnacled form to the height of 2600 feet. The view from the summit is magnificent, embracing nearly the whole of the island. From this spot a good view of the coral reefs may be obtained; the pale green of the shoal water is separated from the deep blue of the ocean by a line of snow-white surf. Here are some luxuriant tree-ferns, fifteen to twenty feet in height, which an English botanist would scarcely recognise as generically identical with his delicate *Cyathea fragilis*. On the shoulder of the mountain I procured eight species of land shells, *Caracolla Mauritianæ*, and some *Helices* and *Pupæ*. A steep cliff covered with brushwood facing Wilhelm's Plains is resorted to by tropic birds (*Ph. æthereus*), many of which I saw wheeling along the face of the precipice several hundred feet below me.

I anticipated great success from dredging in Port Louis, but, during a day's work, only two live species of mollusca of any consequence, a *Mitra* and a *Pleurotoma*\*, were procured. Outside the margin of the coral reefs which fringe the entrance of the harbour, and to which a person may walk at low water, one finds a zone of loose blocks of living *Meandrinæ*, *Astrææ* and other massive corals, among which dredging is impracticable; to this succeeds a belt of dead shells and small fragments of coral; and the remainder of the channel is tenacious and unproductive mud. Although well-aware of the productiveness of this beautiful island in marine objects, I was yet unprepared for the sight of upwards of 100 species of fish, which I frequently witnessed of a morning in the market of Port Louis. Many of them, especially among

\* *P. variegata*.



the *Labridæ*, are of the most gorgeous colours, but the most skilful taxidermist would fail in retaining them. I had the pleasure of being shown by M. Lenard a collection of about 400 coloured drawings intended to illustrate a work on the ichthyology of the island, upon which he has been engaged for many years.

After a monotonous voyage of five weeks and a half, unenlivened by the sight of a single sail, we reached Hobart Town on June 25th. When in lat.  $40^{\circ} 45'$  S. and long.  $123^{\circ} 26'$  E., Capt. Stanley tried for deep sea soundings, having previously got in readiness an invention of his own for detaching the weight (eight 32 lb. shot) upon its reaching the bottom, thus enabling him, if successful, to bring up a small ball-lead with whatever the arming might come in contact with. Unfortunately, however, just as everything appeared to promise success, the line was carried away without apparent cause, after 3500 fathoms (or a trifle less than four statute miles) had been let out. Meanwhile I had been shooting from the jolly-boat and procured several additions to my collection;—*Procellaria leucoptera*, *P. macroptera*, *Prion Turtur* and *P. Banksii*, and some others of the *Procellariadæ*, sixteen species of which interesting family I have already procured and preserved. I am indebted to Mr. Gould's paper "On the *Procellariadæ*" in the 'Annals and Mag. of Nat. History,' and to other information derived from him, for the means of discriminating nearly all the species met with, and during the voyage I have daily noted down their occurrence. The tables thus formed, which I now send to the distinguished author of the 'Birds of Australia,' will assist him in determining the geographical distribution of the members of the family.

Our stay in Van Diemen's Land was but short, and I devoted the greater portion of it to making a long excursion, as, during my former visit, I had been very little inland. It is probable that on our return from the second cruise the ship will refit at Hobart Town, in the event of which I shall lose no time in proceeding at once to the place which I have selected as likely to afford novelties—the Western Tiers and the Lake Country—having been kindly promised every assistance from several friends who have out-stations in that wild district.

After a short passage (during which I procured Gould's *Thalassidroma Nereis*) we reached Sydney. Here the 'Bramble' and 'Castlereagh' surveying schooners, left out by my old friend the 'Fly,' had been awaiting our arrival for many months. Both were paid off; the latter was sold, and the former recommissioned by Captain Stanley as tender to the 'Rattlesnake.' I shall not try your patience by entering upon any description of a place so well-known as the capital of Australasia, but take you at once into "the bush."

Among the excursions which I made was one of sixteen days' duration to Broken Bay and Brisbane Water, chiefly for the purpose of obtaining a small kangaroo, closely allied to *H. Thetidis*, of which a skin had been shown me in Sydney. Although unsuccessful in the main object of my search, I was yet much pleased with the excursion as a reminder of former bush life and a training for future work on the N.E. coast. Among other matters of interest I may allude to the enormous accumulations of dead shells of a large *Arca* [R. 402]\*, which at first sight may be mistaken for raised beaches. These heaps are often twenty feet or more in depth and several hundred yards in length, covered with a stratum of earth supporting the largest *Casuarina*. This shell had for ages constituted the principal food of the Aborigines, who were once so numerous that a settler still alive has seen 300 of their fighting men assembled at one time, while at the present moment there are not more than ten in the district, and in a few years the tribe will be extinct. Here also are some of those magnificent "brushes," portions of which remind one of an Indian jungle. *Eucalypti* of enormous size, and gigantic fig-trees form a canopy above, while below the dense underwood is bound together into a tangled and almost impenetrable mass by creepers and parasitic plants mixed up with cabbage-palms and tree-ferns. A kind of churchyard dampness pervades the atmosphere of these gloomy solitudes, and the silence is broken only by the cooing of the wonga-wonga (*Leucosarcia picata*), or the loud and startling note of the *Psophotes crepitans*. These brushes are the haunts of the *Menura* and satin-bird, also of several species of kangaroo. The dead logs harbour two kinds of *Helix* [R. 386 and 388]† and numbers of coleoptera. One cannot help noticing the powerful influence exercised by insects and their larvæ upon the destruction of fallen timber in these brushes; on the other hand, no sooner does a tree fall into the water than the *Teredo* and a small crustacean [C. 183] effect a lodgement, and in a few months its internal structure resembles that of a honey-comb. Having been provided with a light dredge which could be worked by two persons (although my back has scarcely even now recovered from the straining it received in consequence), we made use of it on several occasions in some of the creeks and also in the main channel, but the weather prevented us from passing the surf in our frail skiff and dredging in Broken Bay. A very few shells, and only two kinds of *Asteriadae*, were all that we obtained.

The best shell obtained by dredging in Port Jackson is *Trigonia pectinata*, of which I have sent a fine series. It is exceedingly

\* *Arca trepezizia*, Desh.

† *Helix Georgiana* and another.

local, as all mine were found in a space not larger than the ship on a bottom of coarse sand and dead shells. *Myochama anomioides* occurred abundantly on *Trigonia*, also on a *Pectunculus*, and a *Struthiolaria*. Huxley has worked out the anatomy of *Trigonia*, and figured the animal in his usual masterly manner. The perseverance and skill which he has shown in his anatomical researches will give a great additional value to the zoological results of the voyage. There is abundance of work on board for three or four naturalists, but, having been unassisted to make collections in all the departments, my duties too often merge into those of a mere collector and preserver of specimens.

Natural history, unlike everything else, does not appear to make much progress in Sydney. The temporary, small, and crowded museum has been steadily merging into a state of chaos ever since I first saw it in 1842. Many of the once-valuable specimens—for example, those collected during Mitchell's first expeditions—are in a wretched state of decay. The adjuncts *impennis*, *calva*, &c. might with propriety be attached to the labels of some of the birds; in a few instances even the stuffing is visible. A new and more suitable building is in progress, and it is to be hoped that with its completion a better state of things will be introduced.

You have probably heard of the Bunyip, an extraordinary aquatic animal whose existence is attested by the Aborigines of the interior. Some months ago the cranium of a monstrous foal was sent down to Sydney as the head of this animal, and since then the head and neck of another hydrocephalic foal have been prepared by a bird-stuffer of the place, and exhibited in his window to gaping hundreds as a nondescript shot while emerging from a pool of the Lachlan, a river of the interior. Leichhardt's second expedition (in which he proposed to cross from Moreton Bay to Swan River) has totally failed, as has also a subsequent attempt to connect his discoveries with those of Sir Thomas Mitchell's. A working collector accompanies Mr. Kennedy at present in the interior, tracing out the Victoria River of Mitchell.

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Moreton Bay, November 1, 1847.

During our passage to this place, I one day, when a little to the southward of Cape Byron, caught four species of mollusca in the towing-net, a *Creseis*, a *Litiopa*, and two others of genera unknown to me. One of these [R. 476]\*, about the eighth of an inch in diameter, resembles *Ianthina* in form, and also in having a vesicular float, but differs from that genus in being furnished

\* It is quite new and most interesting.

with a horny, undulated, concentric operculum, a siphon, and four large fimbriated tentacula. The foot, which is large, is convertible into a concave boat-like disc above the shell. The inclosed sketch will give you some idea of its appearance, but unfortunately the float (which is three or four times larger than the shell, and is composed of twenty to thirty vesicles) had become detached in the specimens which I reserved for examination, so that I could not figure it in connexion with the animal. Is this not a new genus?

I have been much pleased with our two weeks' stay at Moreton Bay. Everywhere one sees signs of its proximity to intertropical Australia, although only in  $27^{\circ} 15'$  S. latitude. *Pandanus pedunculatus* makes its first appearance here, and among the birds, *Attagen Ariel* and a few others appear to have here their southern limits. I one day landed, at low water, upon a large, flat surrounding mud-island, and was surprised to find it a reef of dead coral, chiefly madrepores. Under the loose blocks I picked up the same crustacea which occur on all the reefs to the northward. My last two days here shall be devoted to dredging, but the tides are so strong that I do not anticipate much success. We sail on the 4th for Port Curtis, and this letter goes in a box of specimens which I intend shall be forwarded from Brisbane to Sydney thence to you. Although I have a good many large jars filled with specimens in spirits, ready for transmission, I shall keep them until my return to Sydney, when there will be enough of them to fill a large box. In hopes of being able in April next to communicate satisfactory results of our first cruise,

Believe me to remain, yours very truly,

JOHN MACGILLIVRAY.

Prof. E. Forbes, &c. &c.

V.--*A Supplement to "A Synopsis of the British Rubi."* No. II.

By CHARLES C. BABINGTON, M.A., F.L.S., F.G.S. &c.\*

SOME apology may be necessary for the publication of a second Supplement to my 'Synopsis of Rubi,' in which several new forms are proposed as varieties of recognized species, and one supposed new species is described. It probably will be said of these, as it has been of former descriptions of *Rubi*, that they are only portraits of individuals, not accounts of species or even varieties. In answer to this it may be stated, that several of the plants to which those remarks referred, although originally noticed in one spot (not as single plants, but a crowd of them), have since been found in other and distant parts of the kingdom.

\* Read before the Botanical Society of Edinburgh, 11th May, 1848.